# Infected Varicose Ulcers Treated with Adjuvant HBOT



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# INTRODUCTION

Chronic venous leg ulcers represent a common condition that is, however, difficult to resolve clinically, particularly in elderly and immunosuppressed patients with multiple comorbidities. When associated with secondary bacterial infection and inadequate or insufficient surgical management, these lesions can exhibit rapid tissue deterioration, increased morbidity, and the need for prolonged hospital interventions.

Hyperbaric oxygen therapy (HBOT), by promoting tissue hyperoxia, angiogenesis, stimulation of fibroblast proliferation, and antimicrobial potential, shown promise as an adjuvant therapeutic alternative in the management of these refractory lesions.

This report describes the case of an elderly female patient with a history of multiple sclerosis and chronic infected venous ulcers for over eight years, who showed a significant clinical response after the introduction of HBOT into the multidisciplinary therapeutic plan.

## OBJECTIVE

Describe the clinical course of a patient with refractory chronic infected varicose ulcers treated with adjuvant HBOT, noting its impact on healing, pain, infection, and hospitalization.

# METHOD



Figure 2 - Appearance of the lesion after 25 HBOT sessions and placement of dermal matrix

## DISCUSSION

This case reinforces the utility of HBOT as an adjuvant therapy in the management of complex chronic wounds associated with infection and immunosuppression. In situations such as that of the patient in question, in which conventional treatments — including antimicrobials, dressings, and debridement — fail to promote adequate healing, HBOT acts as a physiological catalyst in tissue regeneration, especially in hypoxic tissues with local vascular deficiency. The response observed after 25 sessions and after 40 sessions was consistent with the expected effects of HBOT, as described in systematic reviews and clinical studies. The positive impact on the patient's pain and quality of life, combined with the possibility of transitioning to home care, contributed to reducing the total length of hospitalization and the prolonged use of antimicrobials, which translates into clinical and economic benefits.

Case study of a 77-year-old female with multiple sclerosis and prolonged use of corticosteroids/immunobiologics, with extensive, recurrent varicose Ulcers since 2016. Admitted on 01/02/2025 with worsening lesions, pain, purulent secretion, fetid odor, and inflammation after Unna boot use. Hospitalized for diagnosis, antibiotics, and multidisciplinary evaluation.

### RESULTS

Initial antibiotics (ceftriaxone/clindamycin) changed to ertapenem/daptomycin (23/01/2024) due to refractoriness. Surgical debridement (07/01/2024) showed chronic ulcerated dermatitis. HBOT (90 min, 2.4 ATA, 5x/week) started 10/01/2024. Bilaminar dermal matrix implanted (06/02/2024). Marked pain reduction, decreased secretion volume/odor, granulation, and epithelialization observed. Discharged after 25 HBOT sessions/18 days with reduced ulcer area and antimicrobial suspension, for home care follow-up. After 40 HBOT sessions, significant improvement persisted, enhancing quality of life and resolving a years-long chronic condition.



Figure 1 - Appearance of the lesion on admission (01/02/2024)

## CONCLUSION

Hyperbaric oxygen therapy has proven to be a safe, effective, and relatively low-cost intervention when used as an adjuvant in the treatment of infected chronic venous leg ulcers in an elderly and immunocompromised patient. This case highlights the importance of a multidisciplinary approach and the incorporation of complementary therapies, such as HBOT, in individualized therapeutic plans, especially in the face of prolonged clinical refractoriness. Prospective and controlled studies are needed to consolidate its applicability and impact in diverse contexts of clinical practice.

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I have no conflict of interest in this poster.

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